



Pete Silks selected as a Fellow of the Royal Society of Chemistry

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The Royal Society of Chemistry Fellows program recognizes scientists for their outstanding achievements in and contributions to chemical sciences, the profession and the Society

Pete Silks of Los Alamos National Laboratory was recently selected as a [Fellow of the Royal Society of Chemistry](#) for his outstanding contributions to the fields spanning bioscience, chemistry and isotope science. Throughout his career, Silks has made achievements in many areas including biofuels design and production as well as drug development.

The Royal Society of Chemistry (RSC) Fellows program recognizes scientists for their outstanding achievements in and contributions to chemical sciences, the profession and the Society. The lifelong designation recognizes RSC members for their excellence in scientific leadership their impact in the field. The RSC has more than 54,000 members and each year the Fellows of the Royal Society elect up to 52 new [Fellows](#).

Silks came to Los Alamos as a staff member in 1990 after working at the University of South Carolina with both organic and inorganic chemists and an enzymologist. Silks was attracted to Los Alamos's National Stable Isotopes Resource, which promised a constant supply of isotopes with which to experiment, as well as the potential to couple his investigations with others of similar interest.

Among his top achievements, Silks' work on organoselenium chemistry helped develop a better understanding of structure and unusual bonding in small molecular complexes. Another highlight is Silks' contribution to the field of bioenergy by using novel chemical conversions to make biofuels. Here, Silks led the development of a safe, economical and scalable two-step process that converts cellulose into hydrocarbons and chemical feedstocks with defined carbon lengths and branching. This work supported a \$1.5M Proctor & Gamble/LANL Cooperative Research and Development Agreement (CRADA) to develop methods to convert biomass oligosaccharides to non-petroleum based chemical feedstocks for surfactant production. This project also included the synthesis of surfactants with increased bio-availability. Historically, surfactants have been challenging to degrade and pose an issue for waste streams; however, the easy degradation of these next generation surfactants is now possible.

His work at LANL has given rise to more than 26 patents, an R&D 100 award, and authoring more than 100 publications in top journals.

Silks also has a passionate interest in public health and development of new drugs, and his work in this area has contributed to the founding of a start-up company, Spinceutica, Inc. that stands to help treat the millions of patients annually fighting tuberculosis (TB). Looking at the current first-line-of-defense drugs, Silks hypothesized that by creating a stable isotope version of the the first line of defense drug isoniazid (replacing one ^{12}C atom with a ^{13}C one), he could enhance its kill rate against TB by way of a phenomenon called the magnetic isotope effect. Not only was this successful, but the resulting drug has shown to be effective in killing TB (5x better than the natural abundance isoniazid) and multiple drug resistant TB, plus in the presence of a magnetic field its kill rate (14x) increases even more. To commercialize and distribute this drug, his group founded Spinceutica, Inc., which is based in Santa Fe, NM and employs a group of Pharmacologists, Enzymologists and Chemists.

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